IN THE CLAIMS:

1. (Currently Amended) A device for producing a microfluid jet in a fluid environment, said device comprising:

a microfluid chamber having:

(i) at least one opening at a distal end;

(ii) a vapor producing means opposite said opening;

wherein said fluid chamber is capable of producing a microfluidic jet in a fluid environment upon actuation; and

a control configured to control actuation of said vapor producing means and thereby increase pressure within said microfluid chamber to accelerate the microfluidic jet to a velocity of at least about 30 meters per second.

2. (Original) The device according to claim 1, wherein said vapor producing means produces a vapor bubble inside said microfluid chamber.

3. (Original) The device according to claim 1, wherein said vapor producing means is a high pressure vapor producing means.

4. (Original) The device according to claim 3, wherein said high pressure vapor producing means is an electrode.

5. (Withdrawn) The device according to claim 3, wherein said high pressure vapor producing means is a laser.

6. (Original) The device according to claim 1, wherein said opening has a diameter ranging from about 1 μm to 1 mm.

7. (Original) The device according to claim 1, wherein a distance of 1 μm to 1 cm separates said opening and said oppositely positioned vapor producing means.

8. (Currently Amended) A device for producing a microfluidic jet in a fluid environment, said device comprising:

a ~~micronozzel~~ micronozzle having a distal end comprising a fluid chamber, wherein said fluid chamber has a volume ranging from about 10 μm^3 to 1 cm^3 and comprises:

(i) a single opening having a diameter ranging from about 1 μm to 1 mm; ~~and~~

(ii) a vapor producing means located opposite said opening and separated from said opening by a distance ranging from about 1 μm to 1 cm;

wherein said fluid chamber is capable of producing a microfluidic jet in a fluid environment upon actuation; and

a control configured to control said actuation of said vapor producing means such that the microfluidic jet is accelerated to a velocity of at least about 30 meters per second.

9. (Original) The device according to claim 8, wherein said vapor producing means is a high pressure vapor producing means capable of introducing energy into a fluid in a manner sufficient to produce a vapor bubble.

10. (Original) The device according to claim 9, wherein said high pressure vapor producing means comprises an electrode.

11. (Withdrawn) The device according to claim 9, wherein said vapor producing means comprises a laser.

12. (Original) The device according to claim 8, wherein said opening has a diameter ranging from about 1 μm to 1 mm.

13. (Currently Amended) A device for producing a microfluidic jet in a fluid environment, said device comprising:

a ~~micronozzel~~ micronozzle having a distal end comprising a fluid chamber, wherein said fluid chamber has a volume ranging from about 10 μm^3 to 1 cm^3 and comprises:

(i) a single opening having a diameter ranging from about 1 μm to 1 mm; ~~and~~

(ii) an electrode vapor producing means located opposite said opening and separated from said opening by a distance ranging from about 10 μm to 1 cm;

wherein said fluid chamber is capable of producing a microfluidic jet in a fluid environment upon actuation; and

a control configured to generate a signal wherein said signal controls actuation of said vapor producing means such that fluid in said micronozzle is expelled from said micronozzle at a velocity of not less than about 30 meters per second.

14. (Currently Amended) A device comprising at least two microfluid chambers, wherein each microfluid chamber comprises:

(i) an opening at a distal end; and

(ii) a vapor producing means opposite said opening;

wherein each of said microfluid chambers is capable of producing a microfluidic jet in a fluid environment upon actuation;

a control configured to generate a signal, wherein said signal controls actuation of said vapor producing means such that fluid in said micronozzle is expelled from said micronozzle at a velocity of not less than about 30 meters per second..

15. (Original) The device according to claim 14, wherein said at least two microfluid chambers are individually actuatable.

16. (Original) The device according to claim 14, wherein said device comprises a plurality of said microfluid chambers.

17. (Original) The device according to claim 16, wherein said device comprises an array of microfluid chambers.

18. (Currently Amended) A method of producing a fluid microjet in a fluid environment, said method comprising:

(a) contacting said fluid environment with a microfluid chamber comprising:

(i) an opening at a distal end; and (ii) a vapor producing means opposite said openings; and

(b) actuating said vapor producing means in a manner sufficient to produce a vapor bubble inside said fluid chamber; whereby a fluid microjet is produced in said fluid environment; and

controlling actuation of said vapor producing means such that the microfluidic jet is accelerated to a velocity of at least about 30 meters per second.

19. (Original) The method according to claim 18, wherein said vapor producing means is actuated in a manner sufficient to produce pulsed microfluid jets in said fluid environment.

20. (Withdrawn) The method according to claim 18, wherein said microfluid chamber is positioned proximal to a tissue in said fluid environment and said method is a method of physically modulating said tissue with said fluid microjet.

21. (Withdrawn) The method according to claim 20, wherein said method is a method of cutting tissue.

22. (Withdrawn) The method according to claim 20, wherein said micronozzel is positioned proximal to a cell and said method is a method of introducing fluid into said cell.

23. (Withdrawn) The method according to claim 20, wherein said micronozzel is positioned proximal to a blood vessel and said method is a method of manipulating a clot by a water jet.

24. (New) The device of claim 1, wherein said control controls actuation of said vapor producing means to accelerate the microfluidic jet to a velocity of at least about 40 meters per second.

25. (New) The device of claim 1, wherein said control controls actuation of said vapor producing means to accelerate the microfluidic jet to a velocity of at least about 50 meters per second.

26. (New) The device of claim 1, wherein said control controls actuation of said vapor producing means to accelerate the microfluidic jet to a velocity of at least about 100 meters per second.

27. (New) The device of claim 1, wherein said control controls actuation of said vapor producing means such that the pressure in said microfluid chamber increases to at least about 10 Bar.

28. (New) The device of claim 1, wherein said control controls actuation of said vapor producing means such that the pressure in said microfluid chamber increases to at least about 100 Bar.

29. (New) The device of claim 1, wherein said control controls actuation of said vapor producing means such that the pressure in said microfluid chamber increases from about 1 Bar to 1000 Bar.

30. (New) The device of claim 1, wherein said control controls actuation of said vapor producing means such that the pressure in said microfluid chamber increases from about 10 Bar to 100 Bar.

31. (New) The device of claim 1, wherein said control controls actuation of said vapor producing means such that the pressure in said microfluid chamber increases over a period of time from about 10 micro seconds to 100 micro seconds.

32. (New) The device of claim 1, further comprising at least one anode and at least one cathode.

33. (New) The device of claim 32, wherein said cathode is positioned on a side wall of said microfluid chamber.

34. (New) The device of claim 32, wherein said cathode is configured to be at least a portion of a side wall of said chamber.

35. (New) The device of claim 1, wherein said control controls actuation of said vapor producing means such that the pressure in said microfluid chamber increases over a period of time from about 1 micro seconds to 10 milliseconds.